

What is claimed is:

1. A surgical needle assembly for endodontic procedures, said assembly comprising:

a needle having one end encapsulated and grippingly supported by a hub member and including a coextensive bore;

said needle further including a protruding hollow shaft portion of predetermined length;

the distal end of said needle including an arcuate longitudinal skived portion having an arcuate height of a predetermined proportional ratio relative to the diameter of said bore.

2. The assembly of claim 1, wherein the height of said skived portion is approximately 2/3 of the diameter of the needle bore.

3. The needle assembly of claim 1 wherein said hub member is arranged for securement to a conventional luer connector.

4. The needle assembly of claim 1 wherein said hollow shaft portion includes a predetermined angular bend.

5. The needle assembly of claim 1 wherein said predetermined bend defines an approximate 45-degree angle.

6. The needle assembly of claim 1 wherein said hollow shaft portion is coated with a corrosion-resistant coating.

7. The needle assembly of claim 1 wherein said

hollow shaft portion is coated with a parylene polymer.

8. The needle assembly of claim 1 wherein said hollow shaft portion is coated with a hydrophobic lubricating agent.

9. The needle assembly of claim 1 wherein said hollow shaft portion is coated with a parlyene polymer and a hydrophobic lubricating agent.

10. The needle assembly of claim 1 wherein the material of said needle is fabricated from a binary NiTi alloy.

11. The needle assembly of claim 10 wherein said NiTi alloy contains 55.8 weight percent Nickel.

12. The needle assembly of claim 3 wherein said hub member is further provided with an intermediate bent portion.

13. The needle assembly of claim 1 wherein said assembly is able to withstand autoclave temperatures.

14. The assembly of claim 13 wherein the autoclave temperature is approximately 135°C.

15. A method of fabricating a surgical needle assembly for endodontic procedures including the steps of:

providing a tubular shaft;

die cutting said shaft to provide a surgical needle of predetermined length;

machining one end of said needle to provide a skived portion of predetermined length;

providing a hub member having a cup-like interior;

supplying an autoclavable adhesive to the cup-like interior of said hub member; and

inserting the opposite end in said adhesive

*Subanj* for retention and support thereof by said hub member.

16. The method of claim 15, wherein the method further includes the steps of:

providing an angle-adjustment sleeve;

supplying an autoclavable adhesive to the hub

5 member;

placing said angle-adjustment sleeve over the needle and into said adhesive for retention and support thereof by said hub member.

17. The method of claim 15, wherein the method further includes the steps of:

providing an angle-adjustment sleeve;

positioning said angle-adjustment sleeve over

5 said needle;

forming a pressure stressed connection between said angle-adjustment and said needle by deforming said angle-adjustment sleeve.

18. A surgical needle assembly for endodontic procedures, said assembly comprising:

a needle having one end encapsulated and grippingly supported by a hub member and including a coextensive bore;

said needle further including a protruding hollow shaft portion of predetermined length;

an angle-adjustment sleeve surrounding a portion of said needle;

10 the distal end of said needle including an arcuate longitudinal skived portion having an arcuate height of a predetermined proportional ratio relative to the diameter of said bore.

19. The needle assembly of claim 18, wherein the angle-adjustment sleeve is formed from an annealed stainless steel.

20. The needle assembly of claim 18, wherein the angle-adjustment sleeve is secured to said hub member.

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4. 21. The needle assembly of claim 18, wherein the angle-adjustment sleeve is adhesively secured to said hub member.

Subcat 7 22. The needle assembly of claim 18, wherein the angle-adjustment sleeve is secured to said hub member using a pressure stressed connection.

4. 23. The needle assembly of claim 18, wherein the angle-adjustment sleeve surrounds approximately one-third of the needle protruding hollow shaft portion.

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